

Appln. No. 10/024,753
Amdt. dated March 2, 2005
Reply to Office Action dated December 14, 2004

IN THE CLAIMS:

Please amend claims 1-10 and add new claims 11-20 as follows. The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended). A method ~~of~~ for analyzing a data set of an object to be examined, which data set comprises voxels of at least a first type and a second type, said method comprising the ~~following~~ steps of:

[[a]] classifying the voxels as voxels of the first, the second or further types; thereafter

[[b]] determining which of the voxels of the first type are boundary voxels that adjoin voxels of the second or further types; thereafter

[[c]] assigning a data value to each voxel of the first type, said data value representing a measure of the distance between said voxel and the nearest boundary voxel; and thereafter

[[d]] classifying the voxels of the first type that have a distance data value exceeding a predetermined threshold as aberration voxels indicative of an aberration in the object.

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Claim 2 (Currently Amended). [[A]] The method as ~~claimed in~~ defined by claim 1, ~~also~~ further comprising the ~~following~~ steps of:

[[e]] determining which of the aberration voxels are boundary aberration voxels adjoining non-aberration voxels of the first type; and

[[f]] adding a number of voxels of the first type that form a shell of a certain thickness to the aberration voxels.
[[;]]

Claim 3 (Currently Amended). [[A]] The method as ~~claimed in~~ defined by claim 2, wherein the step [[f]] of adding a number of voxels of the first type that form a shell of a certain thickness to the aberration voxels comprises the steps of:

[[f1.]] assigning a data value to each voxel of the first type, said data value representing a measure of the distance between said voxel and the nearest boundary aberration voxel; and thereafter

[[f2.]] classifying the voxels of the first type that have a distance data value less than or equal to a predetermined ceiling value as aberration voxels.

Claim 4 (Currently Amended). [[A]] The method as ~~claimed in~~ defined by claim 1, ~~also~~ further comprising the steps of:

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determining the sum of all aberration voxels; and
multiplying the sum of the aberration voxels by the volume
of a single voxel so as to determine the volume of the
aberration.

Claim 5 (Currently Amended). [[A]] The method as ~~claimed in~~
defined by claim 1, wherein said distance data values are
computed by means of a distance transform function.

Claim 6 (Currently Amended). [[A]] The method as ~~claimed in~~
defined by claim 1, wherein said predetermined threshold ~~and/or~~
~~ceiling value~~ is set by [[the]] a user.

Claim 7 (Currently Amended). [[A]] The method as ~~claimed in~~
defined by claim 1, wherein said predetermined threshold ~~and/or~~
~~ceiling value~~ is computed on the basis of a histogram of distance
data values.

Claim 8 (Currently Amended). [[A]] The method as ~~claimed in~~
defined by claim 1, ~~also~~ further comprising the steps of:

defining a tubular structure of voxels of the first type
piercing through the aberration;

determining the number of voxels of the tubular structure;
and

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subtracting said number of voxels of the tubular structure
from the number of aberration voxels.

Claim 9 (Currently Amended). [[A]] The method as ~~claimed in~~
defined by claim 8, ~~also~~ further comprising the steps of:

determining which of the aberration voxels are boundary
aberration voxels adjoining non-aberration voxels of the first
type;

[[a.]] classifying all boundary aberration voxels as
potential tubular structure voxels;

[[b.]] selecting a starting point from among the potential
tubular structure voxels;

[[c.]] selecting an end point from among the potential
tubular structure voxels; and

[[d.]] connecting the starting point to the end point thus
defining the tubular structure.

Claim 10 (Currently Amended). A computer program for
carrying out the method as ~~claimed in~~ defined by claim 1.

Claim 11 (New). The method as defined by claim 3, wherein
said ceiling value is set by a user.

Claim 12 (New). The method as claimed defined by claim 3,

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wherein said predetermined threshold and said predetermined ceiling value are set by a user.

Claim 13 (New). The method as defined by claim 3, wherein said predetermined ceiling value is computed on the basis of a histogram of distance data values.

Claim 14 (New). The method as defined by claim 1, wherein said predetermined threshold and said predetermined ceiling value are computed on the basis of a histogram of distance data values.

Claim 15 (New). The method as defined by claim 1, wherein the object is a blood vessel and the aberration is an aneurysm.

Claim 16 (New). A method for delineating an aneurysm in a blood vessel, comprising the steps of:

representing the blood vessel by means of a data set comprising voxels;

classifying the voxels as vessel voxels or tissue or other type voxels; thereafter

determining which of the vessel voxels are boundary vessel voxels that adjoin tissue or other type voxels; thereafter

assigning a data value to each vessel voxel, the data value representing a measure of the distance between the vessel voxel

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and the nearest boundary vessel voxel; and thereafter
classifying the vessel voxels that have a distance data
value exceeding a predetermined threshold as aberration voxels
indicative of an aneurysm in the blood vessel.

Claim 17 (New). The method as defined by claim 16, further
comprising the steps of:

determining which of the aberration voxels are boundary
aberration voxels adjoining non-aberration voxels of the first
type; and

adding a number of voxels of the first type that form a
shell of a certain thickness to the aberration voxels.

Claim 18 (New). The method as defined by claim 17, wherein
the step of adding a number of voxels of the first type that form
a shell of a certain thickness to the aberration voxels comprises
the steps of:

assigning a data value to each voxel of the first type, said
data value representing a measure of the distance between said
voxel and the nearest boundary aberration voxel; and thereafter

classifying the voxels of the first type that have a
distance data value less than or equal to a predetermined ceiling
value as aberration voxels.

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Claim 19 (New). The method as defined by claim 16, further comprising the step of determining the volume of the aneurysm by determining the sum of all aberration voxels, and multiplying the sum of the aberration voxels by the volume of a single voxel.

Claim 20 (New). The method as defined by claim 16, wherein the voxels are classified by means of a region growing algorithm.